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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/668,541	09/25/2000	Yin-Pin Yang	US 000261	2869

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EXAMINER

KNEPPER, DAVID D

ART UNIT

PAPER NUMBER

2654

DATE MAILED: 07/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/668,541	YANG, YIN-PIN	
	Examiner	Art Unit	
	David D. Knepper	2654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 05 April 2004.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 15 and 16 is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-14 and 17 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 25 September 2000 is/are: a) accepted or b) objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>2 and 4</u> .	6) <input type="checkbox"/> Other: _____

1. Applicant's Information Disclosure Statements filed on 25 September 2000 and 22 April 2002 (papers 2 and 4) has been received and considered. Claims 1-17 are pending.

2. Applicant's election without traverse of the restriction requirement mailed 24 March 2004 (paper #6) in the reply filed on 5 April 2004 is acknowledged.

Applicant has elected Group I, claims 1-14 and 17.

3. The requirement for restriction mailed 24 March 2004 (paper #6) is made FINAL.

4. This application contains claims 15 and 16 drawn to an invention nonelected with traverse in the reply filed on 5 April 2004. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Title

5. The title is objected to because the claimed invention is for speech coding but the title indicates that the invention is for speech recognition.

Abstract

6. The Abstract of the Disclosure is objected to because it is too long. Speech recognition may be mentioned but the first sentence should be deleted to coincide with the elected invention. Correction is required. See M.P.E.P. § 608.01(b).

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means"

and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Priority Claims

7. The applicant(s) should check their filing receipts and/or the Patent Application Information Retrieval (PAIR) system for the acknowledgment of their **domestic** priority or benefit claims (if any) under 35 USC 119(e), 120 or 121 (37 CFR 1.78).

Claims

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-14 and 17 are rejected under 35 U.S.C. § 103 as being unpatentable over *.

As per claims 1, 9 and 17, "speech coding" is taught with Gersho's Vector Quantization: "extracting recognition feature vectors (f)" (his set of parameters (forming a vector) is used to represent the spectral envelope of a speech sound, page 309);

“choosing a number of bits (B) per codebook index or an associated codebook size (Sz)”
(his size N, page 310 and rate... which measures the number of bits per vector component, page 311);

“selecting indic[es] (q) from entries of a codebook having the associate size (Sz) corresponding to the extracted recognition feature vectors (f)” (his finite set C containing N output or reproduction points, called code vectors or codewords, page 310 – this reads on the basic mapping function on the bottom of page 310 which is explained further on page 311).

It is noted that Gersho does not explicitly teach that his coding is “for speech to be recognized”. However, it is common knowledge in the art that speech recognition may be performed in distributed or remote locations connected by telephone, Internet or related systems. The ETSI reference submitted by the applicant not only teaches that it is well known to perform recognition in a distributed manner (page 4) but shows an industry standard for doing so. It would have been obvious for a person having ordinary skill in the pertinent art, at the time the invention was made, to use speech coding to transmit speech signals for far end recognition because Gersho teaches vector quantization for coding speech may itself be considered a form of speech recognition (page 309) and the ETSI reference clearly teaches the use of vector quantization for distributed recognition is a well known combination that has becoming a common standard.

The claim details read on textbook vector quantization as shown by Gersho and noted above. Associating speech specific details such as “vocabulary size” with the codebook size is obvious in view of Gersho’s teaching on page 310: Vector quantization can also be viewed as a front end to a variety of complicated signal processing tasks... In the last few years it has

become an important technique in speech recognition as well as in speech and image compression... Therefore, the relationship between templates or codewords (Gersho, page 310) and their equivalent representation in spoken language is obvious in view of his equating vector quantization...as a form of pattern recognition (Gersho, page 309).

Claims 2-8 and 10-14 are rejected under similar arguments as indicated above. Calculations for proper bit resolution are simple and are obvious in view of the teaching by Gersho on page 311. It is significant that Gersho explicitly states: It is important to recognize that for a fixed dimension k the resolution is determined by the size N of the codebook and not by the number of bits used to numerically specify the code vectors stored in the codebook. The codebook is typically implemented as a table in a digital memory and the number of bits of precision used to represent each component of each code vector does not affect the resolution of the bit-rate of the vector quantizer; it is of concern only in connection with storage space limitations and with the question of adequate precision in describing a well-designed codebook (page 311). This teaches that, for a small vocabulary (few codewords), the codebook could store an extremely high precision while the transmission of the coded speech would require very few bits. Thus, it is well known that the bit rate for any type of vector quantization is dependent on the size of the codebook. Gersho teaches on page 313 that the calculations claimed would be obvious considering the claimed “recognition rate” in terms of the vector rate which would represent blocked vectors that may represent other speech parameters as would be applied for speech recognition.

10. The prior art of applicant's paper #2 (two Japanese Abstracts) was re-listed as "Foreign Patent Documents" to more accurately portray their content and to aid in proper listing of the documents should the instant application ever become a patent.

11. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

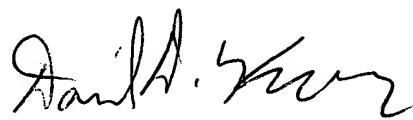
TC2600 Fax Center
(703) 872-9314

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David D. Knepper whose telephone number is (703) 305-9644. The examiner can normally be reached on Monday-Thursday from 07:30 a.m.-6:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil, can be reached on (703) 305-9645.

Any inquiry of a general nature or relating to the status of this application should be directed to customer service whose telephone number is (703) 306-0377.



David D. Knepper
Primary Examiner
Art Unit 2654
June 21, 2004